



# Core Agriculture Support Program Phase II 2011–2015

GMS Working Group on Agriculture





**Core Agriculture  
Support Program  
Phase II  
2011–2015**

**GMS Working Group on Agriculture**



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# Abbreviations

|          |   |  |
|----------|---|--|
| ADB      | – | Asian Development Bank   |
| ASEAN    | – | Association of Southeast Asian Nations                           |
| CASP     | – | Core Agriculture Support Program                                 |
| CBTA     | – | Cross-Border Transport Agreement                                 |
| CDM      | – | Clean Development Mechanism                                      |
| EWEC     | – | East–West Economic Corridor                                      |
| FAO      | – | Food and Agriculture Organization                                |
| GHG      | – | greenhouse gas   |
| GMS      | – | Greater Mekong Subregion   |
| GMS-AINS | – | Greater Mekong Subregion-Agriculture Information Network Service |
| ICT      | – | information and communication technology                         |
| MDGs     | – | Millenium Development Goals                                      |
| NSEC     | – | North–South Economic Corridor                                    |
| PRC      | – | People’s Republic of China                                       |
| SEC      | – | Southern Economic Corridor                                       |
| SMEs     | – | small and medium-sized enterprises                               |
| SPS      | – | sanitary and phytosanitary                                       |
| WGA      | – | Working Group on Agriculture                                     |

# Executive Summary

Greater Mekong Subregion (GMS) member countries have demonstrated their collective comparative advantage through expanded trade, resulting in sizable gains in global market share for key food and agricultural products. The challenge for the subregion is to pursue economic development without creating additional burdens on natural resources thereby preserving ecosystems that are critical to maintaining the quality of life and providing environmental services to society.

Building on the Core Agriculture Support Program (CASP) (2006–2010), CASP Phase II (2011–2015) proposes new strategic directions to address emerging challenges to agricultural development, specifically those linked to expanding cross-border trade in agri-food products and climate change adaptation. CASP Phase II capitalizes on earlier investments and outcomes and will enhance cross-border synergies, making regional cooperation among the GMS countries more relevant. It raises several issues that are common across the GMS and proposes initiatives that require a greater commitment to harmonizing national agricultural development strategies at the subregional level.

Several drivers of change impacting the GMS agriculture sector include (i) accelerated globalization and trade liberalization, (ii) climate change, (iii) degradation of the agricultural resource base, and (iv) investments in transport infrastructure that facilitate cross-border trade and economic growth.

## Drivers of Change in the Agriculture Sector

- (i) **Accelerated globalization and trade liberalization.** Although globalization and trade liberalization support an enabling environment for expanded trade, technical barriers to trade, a category of nontariff barriers to trade, concurrently are being strengthened to protect domestic production. The technical barriers to trade have appeared in many forms, but increasingly food safety assurance systems—in the form of certification, labeling, and traceability procedures—are required in international trade. Natural and organic production systems are emerging as a pro-poor and climate friendly development strategy to respond to the growing global demand for healthy and safe food.
- (ii) **Climate change.** The impacts of climate change will drive producers to implement measures to mitigate and adapt to global warming, increased flooding, drought, pest problems, and effects on crop and livestock productivity. The agriculture sector's contribution to global carbon emissions is known to contribute significantly to climate change, yet the sector can also serve as a carbon sink through reduced deforestation, reforestation, agroforestry, and increased soil carbon sequestration.
- (iii) **Degradation of the agricultural resource base.** Natural resources upon which agricultural production depends are deteriorating due to land degradation, forest loss, and poor agriculture practices. Competition for water and water quality is an increasing concern. The granting of large-scale agricultural land concessions for intensive farming places additional pressure on natural resources and the environment.
- (iv) **Investments in transport infrastructure that facilitate cross-border trade and economic growth.** Public–private partnerships are emerging as models for collaboration in pursuit of balanced economic growth and development. Although agricultural trade and agribusiness development have benefited from completed road links in the North–South Economic Corridor, East–West Economic Corridor, and Southern Economic Corridor, progress in physical connectivity has not been matched by anticipated increases in private investment.

## Greater Mekong Subregion Vision and Strategy for the Agriculture Sector

To improve regional cooperation, CASP Phase II proposes a vision for GMS agriculture in which the GMS is recognized as the leading producer of safe food, using climate friendly agricultural practices and is integrated into global markets through regional economic corridors. The broad strategy of CASP Phase II is to increase subregional agricultural competitiveness and agribusiness investment in the economic corridors. This will be facilitated through modernized trading system that provides links to regional and global markets. The foundation of the strategy includes agricultural research and technology that emphasizes climate friendly agricultural development, private sector involvement to ensure sustainability, and institutional mechanisms to enhance regional cooperation with incentives to achieve the vision.

The broad strategy supports the three pillars that comprise the core strategy for transforming the GMS agriculture sector. It ensures not only achieving food and economic security in rural areas but also providing environmental services, clean water, and mechanisms for carbon sequestration. Each of the three pillars consists of building blocks aimed to move the GMS agriculture sector—through regional cooperation—toward achieving the common vision that includes the following:

**Pillar 1:** Building global competitiveness by promoting food safety and modernizing agricultural trade.

Building blocks: (i) harmonized food safety standards and systems, (ii) paper-free trade and information technology-based traceability systems, (iii) critical mass quality of food and products, and (iv) community-based Participatory Guarantee Approach

**Pillar 2:** Promoting climate-friendly agriculture through market-based strategy to ensure food security while rewarding farmers for their ecosystem services.

Building blocks: (i) carbon financing for agriculture, (ii) climate-resilient farming systems, (iii) weather-based insurance system, and (iv) transboundary invasive species and animal disease control

**Pillar 3:** Promoting agriculture as a leader in providing clean, renewable energy and cross-border eco-friendly supply chains.

Building blocks: (i) regional bioenergy regulatory framework and harmonized standards, (ii) biomass technologies and fertilizers for carbon credit, and (iii) eco-label systems for market access

## New Projects, Broader Financing Sources

CASP Phase II proposes new projects that capitalize on existing initiatives and conform to national agricultural development strategies and programs. It also seeks a broader range of financing sources, including multilateral and bilateral development partners, private enterprises, and national government financing to support regional initiatives.

Future interventions will include (i) support for institutional arrangements for the Working Group on Agriculture, (ii) financing of activities that maximize the benefits of the region, and (iii) a monitoring and evaluation program. Key stakeholders and target beneficiaries will be defined

among the strategic partners. Financing and support from development partners will emphasize country-led initiatives aimed at regional cooperation that promotes cross-border agricultural trade and agribusiness investment.

In addition to reducing poverty and maximizing the benefits of the subregion, projects under CASP Phase II will be evaluated in terms of macro- and meso-level objectives, including (i) meeting national, social, and economic development targets; (ii) facilitating the implementation of national agricultural development strategies; (iii) contributing to achieving the Millennium Development Goals; and (iv) delivering the outputs provided in individual project designs.

An effective institutional mechanism for the Working Group on Agriculture will be defined in the course of implementing CASP Phase II to improve project performance and engage GMS member countries in a more systematic and continuous manner.





# Toward New Strategic Directions of the Greater Mekong Subregion<sup>1</sup>

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<sup>1</sup> Cambodia; Lao People's Democratic Republic; Myanmar; Thailand; Viet Nam; and Guangxi and Yunnan provinces, People's Republic of China.



# Introduction

Agriculture, inclusive of production, processing, and cross-border trading of food and agricultural products, is an important engine of economic growth and poverty reduction in Greater Mekong Subregion (GMS)<sup>2</sup> member countries. With improved connectivity, GMS member countries increasingly source agri-food imports among themselves while simultaneously increasing exports outside of the subregion, demonstrating rapid regional integration of markets for agricultural products. Given the relatively compact geographic area of the GMS and the member countries' comparative advantage in agriculture, regional cooperation in this sector continues to be a high priority.

Formally endorsed by the GMS agricultural ministers in April 2007, the current Core Agriculture Support Program (CASP) Phase I, 2006–2010 is coming to an end and is being revisited to focus more clearly on its strategic direction, taking into account ongoing and emerging challenges. Building upon CASP Phase I, CASP Phase II, 2011–2015 proposes new strategic directions to address emerging challenges to agricultural development, specifically those linked to expanded cross-border trade in food and agricultural products and agribusiness investment.

The 15th GMS Ministerial Meeting on 19 June 2009, in Cha-Am, Phetchaburi Province, Thailand, declared that the highest priority should be placed on three areas: (i) accelerating implementation of the Cross-Border Transport Agreement (CBTA) and other transport and trade facilitation initiatives; (ii) transforming the GMS transport corridors into economic corridors; and (iii) reducing environmental risks to livelihoods and GMS development plans, including those posed by climate change and poor ecological infrastructure.

CASP Phase II capitalizes on earlier investments and outcomes and is expected to enhance cross-border synergies to make regional cooperation more relevant to national and regional agricultural development. It elevates several issues that are common across the GMS and proposes initiatives that require a greater commitment to harmonizing national agricultural development strategies at the subregional level.

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<sup>2</sup> Asian Development Bank (ADB). Forthcoming. *GMS Agricultural Trade and Facilitation Strategy Study*. Manila.

# Greater Mekong Subregion Agriculture Sector

## The Core Agriculture Support Program Phase I Programs to Date

Implementation of CASP Phase I has been supported by the Asian Development Bank (ADB) and several other development partners, including the Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development, among others. CASP Phase I moves forward several regional cooperation strategies. Measures related to facilitating cross-border agricultural trade and investment that include regional initiatives to strengthen human and institutional resources to implement sanitary and phytosanitary (SPS) measures are progressing well. Public–private partnership initiatives have been launched to facilitate the sharing of agricultural information, including the GMS Agriculture Information Network Service (GMS-AINS), supported by the People’s Republic of China (PRC), and the Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy.<sup>3</sup>

Progress has been made in preventing and controlling transboundary invasive species and animal diseases based on regional emergency response mechanisms to manage agricultural and natural resources crises in the GMS. ADB supports the preparation of a trade facilitation study among GMS member countries that provides insights to customs and quarantine procedures at several GMS borders and includes a trade facilitation plan.

## Overview of the Greater Mekong Subregion Agriculture Sector

The GMS member countries have demonstrated their comparative advantage through expanded trade—gaining a sizable share of global markets for key food and agricultural products, such as rice, cassava, prawns, processed fish, poultry products, and rubber. The foundation of the subregion’s agricultural comparative advantage is the quality of natural resources, fertile agro-ecosystems, and rich biodiversity. The challenge for GMS member countries is to pursue economic development without creating additional burdens on natural ecosystems, thus preserving biodiversity and the quality of rural and urban life. The conservation of those resources is dependent on the capacity and commitment of GMS governments to collaborate regionally to improve the management of shared resources while pursuing economic growth.

With the exception of the PRC and Thailand (and to some extent, Viet Nam), agro-industries in the GMS are generally underdeveloped, leaving significant opportunity for agro-economic growth in levels of output, trade, employment, and income generation in the short and medium term. In addition, the pace of agro-economic development is significantly slower in many remote upland and highland areas of the GMS. With regional income growth, rapid urbanization, and changes

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<sup>3</sup> The Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy consists of Cambodia, Lao People’s Democratic Republic, Myanmar, Thailand, and Viet Nam.

in dietary patterns, imports of processed food products are increasing rapidly. For example, the demand for livestock products in the GMS is expected to grow by 3.5%–4.0% annually<sup>4</sup> until 2020, creating opportunities for GMS member countries to address the supply gaps. In this context and simultaneously with developments in East Asia and globally, several drivers of change are emerging in the GMS that generate opportunities for the agriculture sector to lead the transformation of existing GMS transport corridors into thriving economic corridors. Such agro-economic development needs to be based on agriculture that is resilient to climate change, food and agricultural industries producing hygienic food, and value chains for food and agricultural products operating through a modernized trade system. Furthermore, access to developed country markets is characterized by sensitivity to the growing demand for ecologically friendly food and agricultural products that contribute to climate change mitigation and adaptation.

The GMS agriculture sector is highly vulnerable to climate change. Climate change will increase risks to the agriculture sector due to floods, droughts, new diseases, and pests that will disrupt trade, transport, and distribution of inputs and outputs. An ADB study on climate change<sup>5</sup> estimated that irrigated rice production in Southeast Asia will decline by 17% based on three main criteria: (i) level of biophysical exposure (to flood, drought, and sea-water rise), (ii) sensitivity (share of labor employed in agriculture), and (iii) adaptive capacity (poverty, literacy, agricultural gross domestic product, and others). It also points out that three GMS member countries—Cambodia, Lao People’s Democratic Republic, and Myanmar—are among the seven most vulnerable to climate change. The scale of impacts of climate change to GMS agriculture will be enormous, necessitating a paradigm shift in agriculture development policies to promote climate-resilient agriculture.

The GMS is rich in biomass that has been instrumental in insulating rural households from periodic energy crises associated with the use of fossil fuels. Current energy sources in rural communities include fuelwood, animal dung, and other biomass for cooking, heating, and other energy needs. Some rural energy resources, such as fuelwood, are costly in terms of health and time to collect, are detrimental to the environment, and contribute negatively to climate change. The high cost of energy in GMS member countries is also affecting the subregion’s competitiveness in agri-food production and processing. Rural renewable energy or bioenergy sources and technologies are still untapped potentials in GMS member countries. With improved technologies and without jeopardizing food security, rural households are expected to adopt cleaner forms of energy and participate in climate change mitigation and adaptation measures.

## Drivers of Change

Several drivers of change impact the GMS agriculture, rural, and natural resources sector. These include (i) rapid globalization and trade liberalization, (ii) climate change, (iii) deterioration of the agricultural resource base, and (iv) investment in transport infrastructure that facilitates cross-border trade and economic growth.

**Trade liberalization.** Implementation of an expanded Association of Southeast Asian Nations (ASEAN) Free Trade Area starting in January 2010 allows import of agricultural products from Cambodia, Lao People’s Democratic Republic, Myanmar, and Viet Nam into the PRC and Thailand

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<sup>4</sup> Delgado, C. et al. 1999. *Livestock to 2020: The Next Food Revolution*. Washington, DC: International Food Policy Research Institute; Rome: Food and Agriculture Organization of the United Nations; Nairobi: International Livestock Research Institute.

<sup>5</sup> ADB. 2009. *Building Climate Resilience in the Agriculture Sector of Asia and the Pacific*. Manila.

at a zero tax rate. On the other hand, cross-border trade is increasingly characterized by nontariff barriers to trade.<sup>6</sup> With importing countries often having the leeway to interpret international trade rules and regulations, trade restrictions may be imposed more rigorously. The increased political commitment to collective activities on regional trade expansion is of utmost importance in transforming the transport corridors into economic corridors.

**Growing concern for food safety and increasing demand for climate friendly agri-food products.** Globally, consumers are demanding agricultural food products using less agrochemicals and grown through environment friendly methods. This provides farmers with an incentive to modify or adopt production methods and practices that can enhance soil fertility and command premium prices. Organic agriculture, integrated pest management, conservation agriculture, and low carbon emission production are among the types of farming systems that are gaining acceptance among farmers.

**Global food safety concerns.** An increasing number of food safety problems occurring worldwide have heightened consumers' awareness. Beyond contamination from pesticides and heavy metal residues, GMS member countries are particularly prone to increased risk related to mycotoxins<sup>7</sup> and bacterial contamination due to high temperatures and humidity. Expected temperature increases from global warming will increase this risk significantly. Food safety assurance systems in the form of certification, labeling, and traceability procedures are required in international trade. Increased requirements for documentation and reporting under these systems are taking their toll on GMS member countries, in particular, among smallholder farmers who could potentially be further marginalized from the global food trading system by the burden of reporting requirements. Introducing information technology will reduce the cost of documentation, while establishing a common information technology food traceability system at the regional level should be explored. At the same time, regional food safety standards and regulatory systems should be enhanced.

**Climate change mitigation and adaptation.** It is increasingly recognized that the agriculture sector contributes significantly to climate change. Farming activities alone contribute an estimated 14% of global greenhouse gas (GHG) emissions. However, when forestry (land clearing), transport of agri-food products, and production of agrochemicals are included, the sector contributes to more than 45% of global GHG emissions. The main GHG from agriculture are nitrous oxide and methane from intensive crop and livestock production. Concurrently, agriculture is a sink for GHG through a process known as soil carbon sequestration.<sup>8</sup>

**Necessity for improving production, pre- and post-harvest handling.** In areas of intensive production, reduction of agrochemicals and monitoring of quality of input water is essential. In more remote areas, natural and organic production systems are emerging as a development strategy to respond to the growing global demand for healthy and safe food. Recent ADB Institute studies point to organic agriculture being climate friendly, market-oriented, and pro-poor. These pointed out that the costs of achieving the Millennium Development Goals (MDGs) through organic agriculture is estimated at \$36–\$38 per head as compared to \$600–\$880 per head through other forms of public support. Organic agriculture contributes,

<sup>6</sup> Nontariff barriers can be linked to SPS measures, residual pesticide content, and carbon neutral certification, among other factors.

<sup>7</sup> Alfatoxin is the most prevalent, being found on cereal grains, oilseeds, and other food crops.

<sup>8</sup> Carbon sink is anything that absorbs more carbon than it releases. Soil carbon sequestration is capturing carbon from the atmosphere back to the soil and increasing soil organic matter by practices such as composting. It reduces chemical use and increases soil carbon in crop land and degraded land that will lead to improved long-term productivity of the agriculture sector while building resilience to climate change.

both directly and indirectly, to the achievement of the MDGs. Directly, it contributes to (i) MDG-1 (income and food security); (ii) MDGs 4, 5, and 6 (health and sanitation); (iii) MDG-7 (environment: biodiversity, water, climate change adaptation, and mitigation); and (iv) MDG-8 (global partnership in development). Indirectly, it contributes to (i) MDG-2 (education) and (ii) MDG-3 (gender empowerment).

**Maintaining and enhancing the GMS competitive advantage in global food production systems by responding to changing market demand.** Consumers are increasingly becoming aware that food production can be sustainable and environment friendly while positively contributing to their health. Food quality standards, in particular, have been strengthened—this may constrain trade or may stimulate change in international agricultural development. This has taken the form of stricter SPS measures and science-based inspections. Private sector standards have emerged as a result, including global good agricultural practices<sup>9</sup> and ASEAN good agricultural practices, which assure traceability from “farm-to-fork” or from producer to consumer. Private standards are in part a consequence of the inability of the GMS national governments to upgrade their infrastructure, legislation, and capacity to certify products. In response to consumer demand, social responsibility standards have been created, including Fair Trade, ISO 14000–Environmental Management Systems, ISO 24000–Social Responsibility, and SA8000 Social Accountability. Policy makers for the agriculture sector are also increasingly recognizing the usefulness of rewarding smallholder farmers for providing eco-services by using agricultural practices that are environment friendly, including afforestation, reforestation, avoided deforestation, and good land management practices.

**Resource-based constraints.** Natural resources upon which agricultural production depends are deteriorating in the GMS. Land degradation affects up to 40% of the land area in some GMS member countries. Forest loss is the principal cause of land degradation, followed by poor agricultural practices, and overgrazing (in Yunnan Province).<sup>10</sup> The loss of cropland due to rapid urbanization and industrial development is a growing problem. Although forests are the main reservoir of biodiversity, only 44% of the subregion was classified as forest in 2005, with forest cover declining at varying rates in every area except Viet Nam and Yunnan Province (both of which are investing in tree plantations).

**Inadequate water supply.** Although the GMS does not lack water, inadequate water supply systems restrict water availability. Agriculture is by far the largest consumer of water using between 68% (in Viet Nam and the PRC) and 98% (in Cambodia) of total withdrawals.<sup>11</sup> Irrigation development has altered natural flow regimes, with impacts on natural fish populations and wetlands. Increased water withdrawals and dry-season water shortages create competition for water, particularly in intensively irrigated areas such as the Red and Chao Phraya river deltas. The granting of large-scale agricultural land concessions for intensive farming places additional pressure on natural resources and the environment. In addition, the issue of water quality is an increasing concern. Pesticides and heavy metal contamination in water, which affects food safety, will impact the competitiveness of agri-food products of GMS member countries. This process affects the continued market competitiveness of GMS food and agricultural products.

<sup>9</sup> Global good agricultural practices were organized by 37 chains of food retailers that guarantee “farm-to-fork assurance” to consumers. The system is a science-based certification program that operates in 90 countries representing 130 certification bodies. It operates on behalf of retailers to harmonize food safety standards.

<sup>10</sup> Swedish International Development Agency (SIDA). 2009. Scoping Study on Natural Resources and Climate Change in Southeast Asia with a Focus on Agriculture. Draft report. Stockholm.

<sup>11</sup> United Nations Environment Programme. Greater Mekong Environment Outlook. [www.rrcap.unep.org/pub/ea/gmeo07/index.cfm](http://www.rrcap.unep.org/pub/ea/gmeo07/index.cfm)



**Private sector participation.** Private sector participation through innovative institutional arrangements like contract farming and cluster initiatives can promote agricultural modernization, generate a critical mass of quality products, and introduce risk management among smallholder farmers leading to reduction of poverty. Prompted by the 2008 food price crisis, private sector investment in the agriculture sector has been increasing rapidly in the GMS. Appropriate public–private partnerships can facilitate market access and promote market-oriented agricultural production by smallholder farmers, contributing to rural poverty reduction. With large land areas under low-external input agriculture, the region has strong potential to develop into a region of climate friendly agriculture. The private sector can effectively transmit market price information and disseminate guidelines on new market requirements to smallholder farmers and local small and medium-sized enterprises (SMEs).

**Public–private partnerships.** Public–private partnerships can build on the agriculture sector’s comparative advantage to support biological control of crop pests and prevent the spread of transboundary invasive species and animal diseases. GMS producers can explore the subregion’s rich genetic reservoir and source of natural products including nontimber forest products to rehabilitate and revive local genetics and promote climate-resilient traditional strains of grain crops. Stakeholders in the GMS agriculture sector are well placed to promote farming practices that focus on natural, chemical-free crop production using carbon-mitigating composting<sup>12</sup> and integrated pest management linked to growing regional and global markets. These climate friendly practices are appropriate for smallholder producers and will contribute to conserving the subregion’s rich biodiversity.

**GMS transport corridors.** The largely completed road links in the North–South Economic Corridor (NSEC), East–West Economic Corridor (EWEC), and Southern Economic Corridor (SEC) are drivers of change linked to continued expansion of cross-border agriculture trade and the promotion of agribusiness investment. Although the progress in physical connectivity is yet to be matched by increases in private sector investments in the corridors due to nonphysical barriers, the growth in cross-border trade of food and agricultural products has already been significant. Intra-GMS export trade grew by 25.5% annually between 2000 and 2007.<sup>13</sup> Further expansion will require coordinated, focused, and sustained actions to fast-track the transformation of the transport corridors into genuine economic corridors. This will include more effective transport and trade facilitation procedures and smooth implementation of the CBTA. The strategies and action plans for the NSEC, EWEC, and SEC highlight opportunities for cooperation in the agriculture sector, notably (i) cross-border contract farming, (ii) creation of agro-industrial clusters, (iii) cross-border agriculture resource and market information systems, (iv) rural renewable energy development, (v) productivity and quality improvement of cash crops, and (vi) cross-border agriculture supply chains.

## Continuing Challenges

The agriculture sector tends to be productive and resilient, responding well to global price volatility and demonstrating the ability to recover swiftly from natural disasters. Although domination by smallholder farmers has contributed to this resiliency, production is often scattered and insufficient to attract global-level agribusiness enterprises. Public policies and programs

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<sup>12</sup> Compost provides nutrient-rich soils, which results in greater carbon storage of crop biomass. The application of compost reduces the need for GHG-producing chemical fertilizers, pesticides, and others, and greatly increases the amount of carbon sequestered in the soil.

<sup>13</sup> ADB. 2009. GMS Agricultural Trade and Facilitation Study. Incomplete draft report. Manila. August.

to facilitate investment have been updated extensively, but standards of public and corporate governance remain low by international standards. Numerous examples of effective financing of agriculture in the GMS are available for replication by member countries where the sector is underfinanced. The trend in GMS member countries is that the best and brightest rural people—those with the ability to apply modern technology to agriculture and good stewardship to natural resources—have migrated to urban jobs, leaving agricultural land in the hands of those with fewer resources, simply abandoned, or left to fall into the hands of large landowners. In addition, practical implementation of intraregional cooperation tends to be ineffective, notwithstanding the numerous opportunities for collaboration provided by multilateral and bilateral political, economic, and social organizations.

Public investments are deficient in agricultural research and development and technology transfer to support value-added processing of food and agricultural products in Cambodia, Lao People's Democratic Republic, Myanmar, and Viet Nam. Research and extension agencies tend to be dependent on development partners to provide the support needed to develop technologies to increase farm productivity and to accelerate adoption of post-harvest handling technologies. While consumers, retailers, processors, and exporters are becoming increasingly science-based, investment to upgrade capacity in agricultural science and technology development remains a low priority.

The compatibility of information and communication technology (ICT) among GMS member countries continues to be weak. Although the CASP offers support for strengthening institutional links and mechanisms for cooperation, the expected country-led regional dialogue, and forums for participatory planning, design, and knowledge dissemination have not occurred. Few country-led initiatives have been launched, and the commitment to self-instigated activities in the region is weak. Cooperation in ICT-based activities that would permit data sharing (particularly market and price data) requires strengthening. Although some progress has been made by the GMS-AINS supported by the PRC, development of the system at the national level has been hindered by a lack of equipment, trained and assigned personnel, and official commitment to sharing data among other member countries of the GMS.

# Beyond the Core Agriculture Support Program Phase I

## III The Core Strategy for the Greater Mekong Subregion

### Vision for the Greater Mekong Subregion Agriculture Sector

Based on a review of agricultural development priorities identified in the Vientiane Plan of Action, 2008–2012, and CASP Phase I, discussed by GMS Working Group on Agriculture (WGA) Coordinators in various WGA forums,<sup>14</sup> a vision for GMS agriculture and several themes emerged that reflect the interests of agriculture policy makers in the GMS.<sup>15</sup> The themes were combined to create three pillars that form the core strategy of CASP Phase II. The vision for the GMS agriculture sector is *The Greater Mekong Subregion is recognized as the leading producer of safe food, using climate friendly agricultural practices and integrated into global markets through regional economic corridors.*

### Broad Strategy

A modern trading system linked to regional and global markets is fundamental to any increase in agricultural competitiveness and accelerated agribusiness investment in the economic corridors. Such a system should be founded on agricultural research and development that is focused on climate friendly agricultural development, private sector involvement for sustainable development, and institutional mechanisms for regional cooperation with incentives for the vision to be realized.

This broad strategy supports the three pillars that comprise the core strategy for transforming the GMS agriculture, natural resources, and rural sector, to ensure it delivers not only food and economic security in the rural areas but also environmental services, including clean water and mechanisms for carbon sequestration. Each pillar consists of building blocks, which, when implemented, interact to move the GMS agriculture sector toward achieving the common vision—through regional cooperation.

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<sup>14</sup> The WGA Coordinators' Meeting in Bangkok, Thailand, in March 2009; the 6th Annual Meeting of the GMS WGA in Bangkok, Thailand; and the WGA Coordinators' Meeting in Hue, Viet Nam, in January 2010.

<sup>15</sup> The seven themes are based on feedback on a draft of CASP II circulated before the WGA-6 meeting and reflect the themes presented in project concept papers prepared by WGA coordinators, namely (i) rural renewable energy, (ii) market information related to the demand and supply of key agricultural products, (iii) regional food safety standards, (iv) agricultural competitiveness, (v) livestock identification and tracking, (vi) food security, and (vii) global warming (climate change).

# Background of Core Agriculture Support Program Phase II

In realizing the core strategies of the pillars, several complementary strategies form the building blocks to achieve the vision for the GMS.

## Pillar 1: Food Safety

The first pillar of CASP Phase II is *building global competitiveness by promoting food safety and modernizing agricultural trade*. Trade infrastructure will be enhanced by harmonized food safety standards, customs procedures, and science-based traceability systems, including capacity building for appropriate certification and labeling and subregional branding. The four building blocks within the first pillar are (i) harmonized food safety standards and system, (ii) paper-free trade and information technology traceability systems, (iii) critical mass quality of food and products, and (iv) community-based participatory guarantee approach.

Agricultural trade will be facilitated and governed by harmonized rules, and strengthened human resources and institutional capacity. The development of new, modern market infrastructure<sup>16</sup> is an essential building block for promoting agricultural trade and agribusiness investment.

- Trade modernization will be supported using a dual approach: (i) upgrading domestic primary, central, and wholesale markets to improve overall services to smallholder producers; and (ii) streamlining cross-border trade procedures and logistics to minimize transaction costs and administrative delays that cause quality loss, particularly for perishable products.
- The GMS-AINS is to evolve into a subregional trade forum using an internet-based commodity exchange for agri-food products.
- Pre- and post-harvest handling will be improved to retain product quality at the community level and to meet international standards, including global agricultural practices, organic, fair trade, halal, kosher, geographic indications, and others.<sup>17</sup>
- Investments will increase for cold-chain systems, packing facilities, refrigerated warehousing, inventory and traceability systems, and water quality control.
- GMS governments' human resources and institution capacity will be strengthened by modernizing internal controls and adopting ICT-based market management and infrastructure.

Market infrastructure will be strengthened to conform to World Trade Organization standards and to be ahead of competing regions. On agricultural trade, the following elements of market infrastructure will be emphasized:

- Investments leading to harmonization of trade standards, starting with eco-friendly standards;

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<sup>16</sup> Physical plant (e.g., modern border markets with storage, and ICT-based automated operations centers) and logistics.

<sup>17</sup> For livestock and livestock products, the SPS standards are those of the World Organisation for Animal Health (OIE) and Codex Alimentarius.

- Additional harmonization of customs procedures;
- Government inspection operations will be modernized and strengthened to ensure quality control of food and agricultural products and to support equivalence conformity assessment agreements<sup>18</sup> with trading partners;
- Capacity for agricultural product certification and inspection will be strengthened; and
- Alternative certification system, including ICT-based assurance systems and participatory certification and guarantee systems,<sup>19</sup> will be promoted.

Fiscal and nonfiscal policy incentives will be provided to establish agro-industrial cluster linking to global value chain.

- Cluster initiatives will be promoted to create a critical mass of high-quality raw materials for processing and export.
- Agro-industrial clusters of SMEs will be supported by an agribusiness network capable of responding to new market requirements, such as just-in-time delivery,<sup>20</sup> social responsibility standards, and traceability systems.
- Networks of certified organizations will be established to support eco-friendly supply chains that are founded on community and participatory certification and that lead to increased trust among GMS trading partners.

Policy incentives will be provided to attract high-quality private investment in agriculture at the regional level. Innovative institutional mechanisms will be introduced to promote an eco-friendly supply chain management that consists of contract farming, including institutional contract farming, with producer groups being linked to hospitals, hotels, specialty restaurants, and other institutions. Prototype projects will modernize trade and will facilitate cross-border logistical arrangements, which will be promoted to enhance cross-border agribusiness investment in the subregion.

CASP Phase II will support increased investment to develop research in agricultural science-based technologies for enhancing regional food safety. Specific measures will include:

- Harmonizing global agricultural practices and biosafety standards among GMS member countries, based on international standards,<sup>21</sup> particularly in support of SMEs in agro-industrial clusters.
- Developing regional certification and accreditation systems, including community participation and accreditation of regional inspectors, for monitoring and validating the

<sup>18</sup> According to the World Trade Organization on technical barriers to trade:

Members shall ensure, whenever possible, that results of conformity assessment procedures in other Members are accepted...adequate and enduring technical competence of the relevant conformity assessment bodies in the exporting Member, so that confidence in the continued reliability of their conformity assessment results can exist; in this regard, verified compliance, for instance through accreditation, with relevant guides or recommendations issued by international standardizing bodies shall be taken into account as an indication of adequate technical competence.

<sup>19</sup> Participatory guarantee systems are procedures and systems that operate at the community level, with producers monitoring each other to prevent the use of bad agricultural practices. Such systems are essential for integrated pest management, organic agriculture, fair trade and other ethics-based production systems to work. Participatory guarantee systems are also referred to as community guarantee systems. Subsequent certification merely certifies that the products being marketed are in fact as they are labeled.

<sup>20</sup> The just-in-time inventory system focus is having "the right material, at the right time, at the right place, and in the exact amount," without the safety net of inventory.

<sup>21</sup> These include good manufacturing practices, good hygienic practices, hazard analysis and critical control point, and traceability systems.

sustainable harvesting of nontimber forest products and the status of croplands (i.e., guaranteeing that products do not come from clearing natural forests).

- Promoting public and private investments in science and technology related to regional food security, food safety, nutrition, and biofuel applications.
- Strengthening the food safety standards for animal products (terrestrial and aquatic), specifically those of the World Organisation for Animal Health (OIE) and Codex Alimentarius.

## Pillar 2: Climate Friendly Agriculture

The second pillar of CASP Phase II is *promoting climate friendly agriculture through a market-based strategy to ensure food security while rewarding farmers for their ecosystem services*.

Support will be made available to enhance access to the growing market opportunities of climate friendly agri-food products and financial incentives under the Clean Development Mechanism (CDM) for the agriculture sector. Cross-border management of natural resources conservation, including protection of invasive species and animal diseases, will be promoted, particularly among smallholder farmers. The four building blocks under the second pillar are (i) carbon financing for agriculture, (ii) climate-resilient farming systems, (iii) weather-based insurance system, and (iv) transboundary invasive species and animal disease control.

Strengthening the resiliency of GMS agriculture will remain a high priority, ensuring regional food security and globally engaged agricultural development. Food security, consisting of permanent access to sufficient, safe, and nutritious food to meet dietary needs and food preferences for an active and healthy life, will be protected through regional cooperation. Food security and agricultural diversification initiatives supported through the CASP will include provisions for strengthening national regulatory frameworks related to regionally harmonized labeling of foods and conducting nutrition awareness programs for different stakeholder groups.

CASP Phase II will support regional initiatives that encourage GMS producers to adopt climate friendly and resilient agricultural practices. Policy options for the mitigation of GHG emissions from agriculture include (i) conservation agriculture,<sup>22</sup> (ii) improved crop and grazing land management (e.g., improved agronomic practices, nutrient use, tillage, and residue management), (iii) restoration of soil organic matter that have been exhausted by crop production, (iv) rehabilitation of degraded forest lands, and (v) organic agriculture.

Integrated agriculture systems, including conservation agriculture, will be refined and adapted to changes in climate while maintaining competitive advantage in the global food production system. Regionally harmonized financial and fiscal policy incentives will be proposed that could consist of the following interventions:

- Modernization of traditional mixed farming systems through the introduction of high-value products linked to rapidly growing ethical consumerism in the region, including the domestication of nontimber forest products.
- Piloting and adoption of food safety and good practice certification for good agricultural practices, particularly in intensive agriculture areas.
- Promotion of intercropping and diversified crop production to increase resilience to climate change, particularly in areas vulnerable to food deficits.

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<sup>22</sup> Food and Agriculture Organization (FAO) defines conservation agriculture as resource-saving agricultural crop production that strives to achieve acceptable profits together with high and sustained production levels while concurrently conserving the environment.

- Promotion of proper composting to address food safety requirements and increase the organic matter of soils while accessing CDM financing. This process will result in multiple benefits including recycling of biodegradable trash that would otherwise be wasted.
- Promotion of biochar<sup>23</sup> production in rural areas as part of a regional carbon emissions reduction program linked to food and energy security. Biochar qualifies for carbon sequestration projects that generate carbon credits that are measurable, reportable, and verifiable.
- Promotion of organic production of high-value crops in remote and isolated areas, particularly products that could qualify for geographical indications.<sup>24</sup>

If appropriate agricultural, economic, and fiscal policy measures are implemented, GMS production could be increasingly identified as being pro-climate change agriculture (i.e., carbon-neutral and environment friendly, as foreseen by the GMS ministers in June 2009). In this context, climate change is linked to two priority areas of CASP Phase I:

- The regional subsector strategy for strengthening science-based regional food safety standards for agricultural competitiveness, and
- The regional subsector strategy for the conservation of agricultural resources.

Efforts in introducing new crop varieties, improving irrigation, and enhancing resistance to weather perils will not be sufficient to protect agriculture in the GMS from extreme weather events that can severely impact both quality and yield of a crop. Regional mitigation and adaptation policies and effective implementation of appropriate measures will be required. Within the GMS framework, CASP Phase II will promote:

- Regional cooperation conducting a subregional dialogue to analyze and integrate ongoing climate change initiatives launched by regional organizations such as the Mekong River Commission for water resources; regional Consultative Group on International Agricultural Research units for agriculture, fisheries, water resources, and forestry; and including the International Rice Research Institute, WorldFish, International Crops Research Institute for the Semi-Arid Tropics, International Water Management Institute, and Center for International Forestry Research.

CASP Phase II will also support the establishment of risk management systems including regional emergency rice reserve system and weather-based insurance.

- Measures will be required to improve the collection of meteorological data (e.g., using microclimate monitors) in pre-identified regional hot spots to develop one or more subregional weather circulation models.
- GMS member countries will cooperate to establish a subregional database of climate data that includes the use of computer-based microclimate monitors placed throughout the region that feed into an internet-based system making data available

<sup>23</sup> Biochar is a 2,000-year-old practice that converts agricultural waste into a soil enhancer that can hold carbon, boost food security, and discourage deforestation. The process creates a fine-grained, highly porous charcoal that helps soils retain nutrients and water. There are many different ways to make biochar, but all of them involve baking biomass in the absence of air to drive off volatile gasses, leaving carbon behind. This simple process is called thermal decomposition.

<sup>24</sup> The use of geographical indications may act as a certification of intrinsic food quality that focus on geographical features with distinctive, specific quality characteristics that are essentially attributable to its origin as the product comes from a determined geographic area.

to all stakeholders simultaneously. Data analysis will identify trends and predict climate change scenarios. Such a system could be linked to the regional natural disaster advanced-warning protocol.

Linked to the protection of agriculture and forest biodiversity are the services provided to the industrial and tourism sectors by well-managed agro-ecosystems. CASP Phase II will collaborate with the GMS Environment Operations Center and bilateral and multilateral development partners to promote regional initiatives to protect the integrity of ecosystems for poverty alleviation and inclusive growth, while building strong links among agriculture, regional trade, and agribusiness development.

CASP Phase I supported activities related to improving the management of livestock trade and transboundary animal disease control in the subregion including developing guidelines on livestock movement and a system for identification and tracking to facilitate trading of live animals in accordance with national health standards and international obligations. To further enhance these efforts, CASP Phase II will support the following:

- integration with the Emergency Prevention System against transboundary animal and plant pests and diseases; and
- formulating measures for adoption by GMS member countries, focusing on animal diseases, in particular those affecting intraregional and export trade of livestock.

### Pillar 3: Bioenergy

The third pillar of CASP Phase II is *promoting agriculture as a leader in providing clean renewable energy and cross-border eco-friendly supply chains*. Support will be made available to increase production of bioenergy for agro-processing activities, to promote foreign direct investment and to establish a GMS brand that is founded on an eco-friendly supply chain of trust from producer to consumer. The building blocks supporting the third pillar are (i) regional bioenergy regulatory framework and harmonized standards, (ii) biomass technologies for bioenergy and fertilizers for carbon credit, and (iii) eco-label systems for market access.

CASP Phase II will promote biomass-based renewable energy production to address the energy needs of rural households, promote the recycling of agricultural wastes, and thus contribute to sustainable rural development and poverty reduction. CASP Phase II will support research platforms to develop a regional biofuel policy and will look into producing critical mass of several biofuel crops linked to high-end fuel markets.

- Policy research will lead to formulating a harmonized regional biogas and compost policy framework that aims at providing carbon credits for farmers. Cross-border trade and investment policies would benefit all GMS member countries and include pro-poor contract-growing arrangements, appropriate pricing systems, and effective product grading and standards aimed at improving product quality of both feedstock and biofuel.
- Policy-level forums will be organized to formulate harmonized subregional biofuel use and production policies in conjunction with area development and feedstock production policies, including the use of dry biomass for energy production. These will help regulate the proliferation of biofuel processing plants and strategize their location to gain maximum support from each country's infrastructure development plan.<sup>25</sup>

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<sup>25</sup> ADB. 2009. *Integrating Biofuel and Rural Renewable Energy Production in Agriculture for Poverty Reduction in the Greater Mekong Subregion: An Overview and Strategic Framework for Biofuel Development*. Manila.



- Multisector stakeholder forums will be organized at the subregional level to promote knowledge exchange and identify funding sources for research and technology development and for the enhancement of human resources capability. It will also be organized to enable member countries to agree on a framework for developing a GMS label linked to GHG emissions for application to agri-food products. Components of such an initiative could consist of promoting the use of wet biomass as compost.
- SMEs will be encouraged to use renewable energy to process agricultural products and to obtain recognition of an appropriate regional label by global supply chains. The efficient and low-cost processing of value-added products in the GMS, along with obtaining an appropriate regional label, is increasingly critical to market access and competitiveness.
- National and community carbon discharges will be managed through renewable energy technologies, including (i) regional agricultural waste recycling and compost-making programs, and (ii) methodologies approved for implementation under the CDM of the Kyoto Protocol.

CASP Phase II will support the building of cross-border supply chains of eco-friendly products based on trust to ensure profit, while benefiting people and the planet. Benefits from backward and forward links and investment opportunities in the supply chain will be maximized. The CASP will support the following initiatives:

- Creation of a GMS regional eco-brand and appropriate labels for agri-food products. These eco-products will (i) be packaged using biodegradable materials, (ii) use clean energy in processing, and (iii) be certified by communities and accredited local inspectors.
- Support will be provided for farmers to diversify into high-value products based on recycling of biomass into bioenergy and bio-fertilizer to reduce production costs.
- Support will be forthcoming to build a climate-friendly image for GMS products, to project the subregion as one that cares for people, planet, and profit.

# Foundation of Core Agriculture Support Program Phase II

The foundation of the three pillars consists of elements critical to agricultural modernization—agricultural research and development, private sector involvement, and institutional mechanisms for regional cooperation.

- The foundation for innovation and technical improvement is a strong research capacity. FAO points out that hundreds of individual studies of the social rate of return to research consistently show the rate of return to public investment in agricultural research (40%–50%) as higher than other opportunities for public investment.<sup>26</sup>
- Private sector involvement can ensure access to domestic, regional, and global markets and the sustainability of agricultural development. Participation of the private sector also has the potential to facilitate technology transfer, and provide inputs and agricultural credit in rural areas. In addition, the private sector can contribute to retaining value addition from agro-processing.
- Institutional mechanisms for regional cooperation offer opportunities for identifying and developing cross-border synergies, promoting cost savings through regional collaboration and economies of scale, and exchanging and capitalizing on lessons learned. These elements build upon existing expert networks, successful cross-border activities, and outputs that benefit GMS member countries as a group. Examples of regional institutional mechanisms include the Association of Southeast Asian Nations (ASEAN), ASEAN Free Trade Area, Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy, GMS working groups, and the GMS Cross-Border Transport Agreement, among others.

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<sup>26</sup> FAO. 2009. *Setting Meaningful Investment Targets in Agricultural Research and Development: Challenges, Opportunities, and Fiscal Realities*. Rome.

# Implementation

A road map presented as Appendix 1 for the CASP can be accessed through the Working Group on Agriculture (WGA) website<sup>27</sup> that proposes new projects capitalizing on existing initiatives and national agricultural development strategies and programs. Appendix 2 presents recently completed, ongoing, and proposed projects to which ADB is committed, in support of the CASP. The appendix is a flexible document and can be changed if suitable and necessary to program development.

**Implementation arrangements.** The design of each intervention will include appropriate institutional arrangements, financing measures, and a monitoring and evaluation program. Key stakeholders and target beneficiaries will be defined among the strategic partners participating in the intervention. The principal emphasis of financing and support from development partners will be on country-led initiatives aimed at regional partnerships promoting cross-border agricultural trade and agribusiness investment.

**Financial arrangements.** Although ADB has provided significant funding to support CASP Phase I, a broader range of financing sources is being sought to implement CASP Phase II. Multilateral and bilateral development partnerships and national government financing will be sought to support regional initiatives with outcomes that are measurable across borders. Projects that demonstrate partnership among two or more GMS governments will be given a high priority in seeking development support. Local partnership between donors, GMS governments, domestic and international nongovernment organizations, civil society groups, business enterprises, and other key stakeholders at the regional level is encouraged to maximize outputs from leveraged funding.

**Performance and monitoring.** The three pillars of CASP Phase II are mutually reinforced in contributing toward the realization of the GMS agriculture sector vision. In addition to reducing poverty, projects financed in support of CASP Phase II will be evaluated in terms of macro- and meso-level objectives, including (i) meeting national, social, and economic development targets; (ii) facilitating the implementation of national agricultural development strategies; (iii) contributing to achieving the Millenium Development Goals and (iv) delivering the outputs provided in the individual project designs. A monitoring framework will be developed for the implementation of CASP Phase II.

An effective institutional mechanism for the WGA will be defined in the course of implementing CASP Phase II, which is expected to improve project performance and engage GMS member countries on a more sustainable basis. GMS governments will prepare national annual reports on progress made under CASP to be presented at the annual WGA Coordinators' Meeting. Building on this process, additional institutional arrangements are expected to emerge.<sup>28</sup>

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<sup>27</sup> [www.adb.org/gms/wga/default.asp](http://www.adb.org/gms/wga/default.asp)

<sup>28</sup> The list of projects proposed to be supported under CASP II are available upon request at [gmswga@adb.org](mailto:gmswga@adb.org)

## Core Agriculture Support Program Phase II 2011–2015

A more integrated, harmonious, prosperous, and equitable Greater Mekong Subregion (GMS) requires agriculture to be the lead contributing sector. Regional cooperation in the agriculture sector is guided by the Core Agriculture Support Program (CASP), which is implemented by the Working Group on Agriculture. Under CASP Phase I (2006–2010), GMS member countries expanded agriculture trading, resulting in sizable gains in the global market. The current CASP Phase II (2011–2015) addresses issues on expanding cross-border trade in agri-food products, climate change mitigation and adaptation, and promotion of inclusive supply chain to enhance food security.

## About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.8 billion people who live on less than \$2 a day, with 903 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

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